

SHOOTING-STARS.

As usual, in the period August 9th-12th corresponding observations on shooting-stars were arranged for from stations in Denmark and surrounding countries. At six stations 140 paths of shooting-stars were mapped, but only two proved suitable for calculation. These two meteors have given the following results:—

FOR OBSERVATION.

No.	Time.	Station.	Beginning.	Ending.	Mag.	Observer.
	h m s					
1	Aug. 9, 10 11 50 P. M.	Stade	$46^{\circ} + 67.5$	$57^{\circ} + 69$	2	V. Dohn
		Odder	$292 + 11$	$283 - 5$	1	T. Köhl
2	Aug. 12, 11 13 50 P. M.	Sonderburg..	$24 + 36$	$15 + 30$	2	M. Wolff
		Nyborg	$3 + 37.5$	$346 + 27$	2	C. Frost

FOR CALCULATION.

No.	Beginning.			Ending.			Real Length of the Path.	Radiant.
	<i>h</i>	λ	ϕ	<i>h</i>	λ	ϕ	β	<i>AR Decl.</i>
1	129	$2^{\circ} 9'$	$54^{\circ} 51'$	90	$2^{\circ} 34'$	$54^{\circ} 34'$	59	$25^{\circ} + 66$
2	123	$0^{\circ} 6'$	$55^{\circ} 18'$	96	$0^{\circ} 40'$	$54^{\circ} 59'$	58	$59^{\circ} + 47$

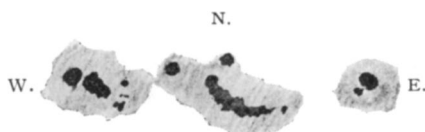
h and β are expressed in kilometers; λ is west longitude from Copenhagen; ϕ is north latitude; *h* is the altitude of the meteor above the Earth's surface. Odder and Nyborg are situated in Denmark; Stade (Hanover) and Sonderburg (Schleswig), in Germany.

DEVELOPMENT OF THE RECENT LARGE
SUNSPOT.

BY ROSE O'HALLORAN.

On the morning of the 10th of January a spot of moderate dimensions was inside the northeast limb of the Sun, and on the morning following several small companion spots were in view. On the 12th, the foremost, and another some degrees in the rear, had increased considerably in size. In the fore-shortened view they were oval, connected by a straggling penumbral filament, and followed by a smaller spot. The

foremost section was much enlarged on the 14th and the group extended over an area 100,000 miles in length. Clouds hindered observations on the 15th, but when observed on the 16th a general enlargement had taken place, the central section especially having developed from the smallest into the



Great Sunspot.

January 16, 1905, 10.40 A.M.

largest of the three divisions. Ten dark umbrae were distributed over the penumbral tracts which covered an area 123,000 miles in length, and 30,000 in width. The heliographic latitude was about eleven degrees north. Between passing clouds on the 17th and 18th of January it was discerned without magnifying power, and in brief views on a screen it was noticeably decreased. The central development was transient, both umbra and penumbra being reduced one half on the morning of the 19th. The eastern half of the disk also displayed evidences of activity, though on a much smaller scale. Hundreds of spots have appeared on the Sun since the minimum in 1902, but this is only the second of enormous extent, the first of the present maximum having occurred in October, 1903.

SAN FRANCISCO, January 19, 1905.
